

**NEW SOURCE CONSTRUCTION PERMIT
and MINOR SOURCE OPERATING PERMIT
OFFICE OF AIR QUALITY**

**DePuy Orthopaedics, Inc.
700 Orthopaedic Drive
Warsaw, Indiana 45681**

(herein known as the Permittee) is hereby authorized to construct and operate subject to the conditions contained herein, the emission units described in Section A (Source Summary) of this permit.

This permit is issued to the above mentioned company under the provisions of 326 IAC 2-1.1, 326 IAC 2-6.1 and 40 CFR 52.780, with conditions listed on the attached pages.

Operation Permit No.: MSOP 085-13979-00048	
Issued by: Original signed by Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: June 28, 2001

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SECTION A

SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-5.1-3(c)] [326 IAC 2-6.1-4(a)]

The Permittee owns and operates a stationary orthopaedic appliance manufacturing source.

Authorized Individual: DePuy Orthopaedics, Inc.
Source Address: 700 Orthopaedic Drive, Warsaw, Indiana 45681
Mailing Address: P.O. Box 988, Warsaw, Indiana 45681
Phone Number: (219) 267-8143
SIC Code: 3842
County Location: Kosciusko
County Status: Attainment for all criteria pollutants
Nonattainment for
Source Status: Minor Source, under PSD Rules;
Major Source, Section 112 of the Clean Air Act

A.2 Emissions units and Pollution Control Equipment Summary

This stationary source is approved to construct and operate the following emissions units and pollution control devices:

- (a) Two paint Booths, identified as SB4 and SB5, each equipped with an airless spray gun, for metal parts, with a maximum capacity at each spray gun of 0.125 units per hour, using dry filters for overspray control and exhausting to stacks E105 and E106, respectively.
- (b) One natural gas rooftop heater, identified as unit 92, with a maximum capacity of 0.045 MMBTU/hr and exhausting to stack 92.
- (c) One natural gas rooftop heater, identified as unit 76, with a maximum capacity of 0.115 MMBTU/hr and exhausting to stack 76.
- (d) One natural gas rooftop heater, identified as unit 65, with a maximum capacity of 0.18 MMBTU/hr and exhausting to stack 65.
- (e) Two natural gas rooftop heaters, identified as units 93 and 109, each with a maximum capacity of 0.2 MMBTU/hr and exhausting to stacks 93 and 109, respectively.
- (f) Three natural gas rooftop heaters, identified as units 90, 91 and 107, each with a maximum capacity of 0.25 MMBTU/hr and exhausting to stacks 90, 91 and 107, respectively.
- (g) Three natural gas rooftop heaters, identified as units 82, 83 and 84, each with a maximum capacity of 0.275 MMBTU/hr and exhausting to stacks 82, 83 and 84, respectively.

- (h) Three natural gas rooftop heaters, identified as units 12, 13 and 14, each with a maximum capacity of 0.36 MMBTU/hr and exhausting to stacks 12, 13 and 14, respectively.
- (i) Ten natural gas rooftop heaters, identified as units 96, 97, 98, 99, 100, 101, 102, 103, 104 and 108, each with a maximum capacity of 0.373 MMBTU/hr and exhausting to stacks 96, 97, 98, 99, 100, 101, 102, 103, 104 and 108, respectively.
- (j) Two natural gas rooftop heaters, identified as units 94 and 95, each with a maximum capacity of 0.43 MMBTU/hr and exhausting to stacks 94 and 95, respectively.
- (k) One natural gas rooftop heater, identified as unit 75, with a maximum capacity of 0.485 MMBTU/hr and exhausting to stack 75.
- (l) One natural gas rooftop heater, identified as unit 66, with a maximum capacity of 0.59 MMBTU/hr and exhausting to stack 66.

This source is approved to operate the following emission units and pollution control devices:

- (m) Three paint Booths, identified as SB1, SB 2 and SB3, installed in 1989, each equipped with an airless spray gun, for metal parts, with a maximum capacity at each spray gun of .25 unit per hour, using dry filters for overspray control and exhausting to stacks E85, E86 and E87, respectively.
- (n) Two natural gas rooftop heaters, identified as units 60 and E23, each installed in 1989, each with a maximum capacity of 0.05 MMBTU/hr and exhausting to stacks 60 and E23, respectively.
- (o) Two natural gas rooftop heaters, identified as units 37 and 39, each installed in 1978, each with a maximum capacity of 0.0625 MMBTU/hr and exhausting to stacks 37 and 39, respectively.
- (p) One natural gas rooftop heater, identified as unit 30, installed in 1983, with a maximum capacity of 0.063 MMBTU/hr and exhausting to stack 30.
- (q) Five natural gas rooftop heaters, identified as units 1, 25, 33, 38 and 48/49, installed in 1974, 1984, 1985, 1978, and 1987, respectively, each with a maximum capacity of 0.08 MMBTU/hr and exhausting to stacks 1, 25, 33, 38 and 48/49, respectively.
- (r) Two natural gas rooftop heaters, identified as units 22 and 26, installed in 1989 and 1990, respectively, each with a maximum capacity of 0.086 MMBTU/hr and exhausting to stacks 22 and 26, respectively.
- (s) Four natural gas rooftop heaters, identified as units E22, E51, E54 and E55, installed in 1990, 1989, 1983, and 1983, respectively, each with a maximum capacity of 0.1 MMBTU/hr and exhausting to stacks E22, E51, E54 and E55, respectively.
- (t) One natural gas rooftop heater, identified as unit 7, installed in 1980, with a maximum capacity of 0.11 MMBTU/hr and exhausting to stack 7.
- (u) Six natural gas rooftop heaters, identified as units 11, 19, 20, 44, 69 and 73/74, installed in 1980, 1983, 1983, 1987, 1987, and 1993, respectively, each with a maximum capacity of 0.115 MMBTU/hr and exhausting to stacks 11, 19, 20, 44, 69 and 73/74, respectively.

- (v) Six natural gas rooftop heaters, identified as units 15, 16, 46, 61, 62 and 41/42/43, installed in 1983, 1983, 1987, 1989, 1989, and 1987, respectively, each with a maximum capacity of 0.1155 MMBTU/hr and exhausting to stacks 15, 16, 46, 61, 62 and 41/42/43, respectively.
- (w) Three natural gas rooftop heaters, identified as units 70, 71 and 67/68, installed in 1991, 1993, and 1987, respectively, each with a maximum capacity of 0.12 MMBTU/hr and exhausting to stacks 70, 71 and 67/68, respectively.
- (x) Four natural gas rooftop heaters, identified as units 21, 24, 40 and 47, installed in 1989, 1984, 1987, and 1987, respectively, each with a maximum capacity of 0.125 MMBTU/hr and exhausting to stacks 21, 24, 40 and 47, respectively.
- (y) One natural gas rooftop heater, identified as unit E24, installed in 1989, with a maximum capacity of 0.13 MMBTU/hr and exhausting to stack E24.
- (z) One natural gas rooftop heater, identified as unit 51/52/53/57/58/59, installed in 1989, with a maximum capacity of 0.1331 MMBTU/hr and exhausting to stack 51/52/53/57/58/59.
- (aa) Two natural gas rooftop heaters, identified as units 8 and 10, installed in 1980, each with a maximum capacity of 0.15 MMBTU/hr and exhausting to stacks 8 and 10, respectively.
- (bb) One natural gas rooftop heater, identified as unit 63/64, installed in 1989, with a maximum capacity of 0.158 MMBTU/hr and exhausting to stack 63/64.
- (cc) Two natural gas rooftop heaters, identified as units E18 and E65, installed in 1981 and 1985, respectively, each with a maximum capacity of 0.165 MMBTU/hr and exhausting to stacks E18 and E65, respectively.
- (dd) One natural gas rooftop heater, identified as unit E19, installed in 1981, with a maximum capacity of 0.175 MMBTU/hr and exhausting to stack E19.
- (ee) One natural gas rooftop heater, identified as unit 27, installed in 1990, with a maximum capacity of 0.18 MMBTU/hr and exhausting to stack 27.
- (ff) One natural gas rooftop heater, identified as unit E67, installed in 1985, with a maximum capacity of 0.195 MMBTU/hr and exhausting to stack E67.
- (gg) One natural gas rooftop heater, identified as unit E66, installed in 1985, with a maximum capacity of 0.2 MMBTU/hr and exhausting to stack E66.
- (hh) Five natural gas rooftop heaters, identified as units 2, 4, 6, 9 and 17/18, installed in 1974, 1974, 1974, 1980 and 1983, respectively, each with a maximum capacity of 0.225 MMBTU/hr and exhausting to stacks 2, 4, 6, 9 and 17/18, respectively.
- (ii) Two natural gas rooftop heaters, identified as units 3 and 5, installed in 1974, each with a maximum capacity of 0.25 MMBTU/hr and exhausting to stacks 3 and 5, respectively.
- (jj) One natural gas rooftop heater, identified as unit 45, installed in 1987, with a maximum capacity of 0.2875 MMBTU/hr and exhausting to stack 45.
- (kk) One natural gas rooftop heater, identified as unit 72, installed in 1993, with a maximum capacity of 0.8 MMBTU/hr and exhausting to stack 72.

- (ll) One Zyglo dipping process, identified as emission units 85105 and 85106, installed in 1997 and 2000, respectively, with a total maximum capacity of 100 units per hour and venting internally.
- (mm) One Dip Seal process, identified as emission unit 72043, installed in 1993, with a maximum capacity of 100 units per hour and venting internally.
- (nn) One SIS Cleaning Process, identified as emission unit E75, installed in 1998 with a maximum solvent throughput of 0.045 tons per year and venting internally.
- (oo) One Acetic Acid Sterilizing process, identified as emission unit E121, installed in 1995, with a maximum solvent throughput of 0.44 tons per year and venting internally.
- (pp) One isopropyl acid wipe-down process, installed in 1980, with a maximum solvent throughput of 0.8 tons per year and venting internally.
- (qq) Three liquified petroleum gas fired fork lift trucks rated at 48, 49 and 90 HP.
- (rr) One degreaser, identified as emission unit 86105/86106, installed in 1992, with a maximum solvent consumption of 3.0 gallons per day, using a wet scrubber for control and exhausting through stack E122.
- (ss) Three degreasers, identified as emission units 85105, 85106 and 83122, installed in 1997, 2000 and 1994, respectively, each with a maximum solvent consumption of 0.5 gallons per day, and exhausting through stacks E55, E120 and E60, respectively.
- (tt) One small covered degreaser, with a maximum solvent capacity of 1 gallon and venting internally.
- (uu) One polishing operation, consisting of 40 polishing jacks, installed between 1981 and 1998, each with a maximum throughput of 10 pieces per hour, using wet dust collectors 00222 and 00266 for PM control, and exhausting through stacks WDC1 and WDC2.

A.3 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because:

- (a) It is a major source, as defined in 326 IAC 2-7-1(22);
- (b) It is a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3 (Part 70 - Applicability).

SECTION B GENERAL CONSTRUCTION CONDITIONS

THIS SECTION OF THE PERMIT IS BEING ISSUED UNDER THE PROVISIONS OF 326 IAC 2-1.1 AND 40 CFR 52.780, WITH CONDITIONS LISTED BELOW.

B.1 Permit No Defense [IC 13]

This permit to construct does not relieve the Permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

B.2 Definitions

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, any applicable definitions found in IC 13-11, 326 IAC 1-2, and 326 IAC 2-1.1-1 shall prevail.

B.3 Effective Date of the Permit [IC13-15-5-3]

Pursuant to IC 13-15-5-3, this permit becomes effective upon its issuance.

B.4 Revocation of Permits [326 IAC 2-1.1-9(5)]

Pursuant to 326 IAC 2-1.1-9(5)(Revocation of Permits), the Commissioner may revoke this permit if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.

B.5 Modification to Permit [326 IAC 2]

Notwithstanding the Section B condition entitled "Minor Source Operating Permit", all requirements and conditions of this construction permit shall remain in effect unless modified in a manner consistent with procedures established for modifications of construction permits pursuant to 326 IAC 2 (Permit Review Rules).

B.6 Minor Source Operating Permit [326 IAC 2-6.1]

This document shall also become a minor source operating permit pursuant to 326 IAC 2-6.1 when, prior to start of operation, the following requirements are met:

- (a) The attached Affidavit of Construction shall be submitted to the Office of Air Quality (OAQ), Permit Administration & Development Section.
 - (1) If the Affidavit of Construction verifies that the facilities covered in this Construction Permit were constructed as proposed in the application, then the facilities may begin operating on the date the Affidavit of Construction is postmarked or hand delivered to IDEM.
 - (2) If the Affidavit of Construction does not verify that the facilities covered in this Construction Permit were constructed as proposed in the application, then the Permittee shall receive an Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section prior to beginning operation of the facilities.
- (b) If construction is completed in phases; i.e., the entire construction is not done continuously, a separate affidavit must be submitted for each phase of construction. Any permit conditions associated with operation start up dates such as stack testing for New Source Performance Standards (NSPS) shall be applicable to each individual phase.
- (c) Upon receipt of the Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section, the Permittee shall attach it to this document.

- (d) The operation permit will be subject to annual operating permit fees pursuant to 326 IAC 2-7-19 (Fees).
- (e) Pursuant to 326 IAC 2-7-4(a)(1)(A)(ii) and 326 IAC 2-5.1-4, the Permittee shall apply for a Title V operating permit within twelve (12) months of the date on which the source first meets an applicability criterion of 326 IAC 2-7-2.

SECTION C

SOURCE OPERATION CONDITIONS

Entire Source

C.1 PSD Minor Source Status [326 IAC 2-2] [40 CFR 52.21]

- (a) The total source potential to emit of all criteria pollutant is less than 250 tons per year. Therefore the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) and 40 CFR 52.21 will not apply.
- (b) Any change or modification which may increase potential to emit to 250 tons per year from this source, shall cause this source to be considered a major source under PSD, 326 IAC 2-2 and 40 CFR 52.21, and shall require approval from IDEM, OAQ prior to making the change.

C.2 Preventive Maintenance Plan [326 IAC 1-6-3]

- (a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMP) after issuance of this permit, including the following information on each emissions unit:
 - (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
 - (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions;
 - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.
- (b) The Permittee shall implement the Preventive Maintenance Plans as necessary to ensure that failure to implement the Preventive Maintenance Plan does not cause or contribute to a violation of any limitation on emissions or potential to emit.
- (c) PMP's shall be submitted to IDEM, OAQ, upon request and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ, may require the Permittee to revise its Preventive Maintenance Plan whenever lack of proper maintenance causes or contributes to any violation.

C.3 Source Modification [326 IAC 2-7-10.5]

- (a) The Permittee must comply with the requirements of 326 IAC 2-7-10.5 whenever the Permittee seeks to construct new emissions units, modify existing emissions units, or otherwise modify the source.
- (b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

Any such application should be certified by the "responsible official" as defined by 326 IAC 2-7-1(34) only if a certification is required by the terms of the applicable rule.

C.4 Inspection and Entry [326 IAC 2-5.1-3(e)(4)(B)] [326 IAC 2-6.1-5(a)(4)]

Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee's right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as such, the Permittee shall allow IDEM, OAQ, U.S. EPA, or an authorized representative to perform the following:

- (a) Enter upon the Permittee's premises where a permitted source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;
- (b) Have access to and copy, at reasonable times, any records that must be kept under this title or the conditions of this permit or any operating permit revisions;
- (c) Inspect, at reasonable times, any processes, emissions units (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit or any operating permit revisions;
- (d) Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and
- (e) Utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

C.5 Transfer of Ownership or Operation [326 IAC 2-6.1-6(d)(3)]

Pursuant to [326 IAC 2-6.1-6(d)(3)] :

- (a) In the event that ownership of this source is changed, the Permittee shall notify IDEM, OAQ, Permits Branch, within thirty (30) days of the change.
- (b) The written notification shall be sufficient to transfer the permit to the new owner by an notice-only change pursuant to 326 IAC 2-6.1-6(d)(3).
- (c) IDEM, OAQ, shall issue a revised permit.

The notification which shall be submitted by the Permittee does require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1.

C.6 Permit Revocation [326 IAC 2-1-9]

Pursuant to 326 IAC 2-1-9(a)(Revocation of Permits), this permit to construct and operate may be revoked for any of the following causes:

- (a) Violation of any conditions of this permit.
- (b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this permit.
- (c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this permit shall not require revocation of this permit.
- (d) Noncompliance with orders issued pursuant to 326 IAC 1-5 (Episode Alert Levels) to reduce emissions during an air pollution episode.
- (e) For any cause which establishes in the judgment of IDEM, the fact that continuance of this permit is not consistent with purposes of this article.

C.7 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.8 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions). 326 IAC 6-4-2(4) is not federally enforceable.

Testing Requirements

C.9 Performance Testing [326 IAC 3-6]

- (a) Compliance testing on new emissions units shall be conducted within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up, if specified in Section D of this approval. All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

A test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

no later than thirty-five (35) days prior to the intended test date. The Permittee shall submit a notice of the actual test date to the above address so that it is received at least two weeks prior to the test date.

- (b) All test reports must be received by IDEM, OAQ within forty-five (45) days after the completion of the testing. An extension may be granted by the IDEM, OAQ, if the source submits to IDEM, OAQ, a reasonable written explanation within five (5) days prior to the end of the initial forty-five (45) day period.

The documentation submitted by the Permittee does not require certification by the "authorized individual" as defined by 326 IAC 2-1.1-1.

Compliance Monitoring Requirements

C.10 Monitoring Methods [326 IAC 3]

Any monitoring or testing required by Section D of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, or other approved methods as specified in this permit.

Record Keeping and Reporting Requirements

C.11 Malfunctions Report [326 IAC 1-6-2]

Pursuant to 326 IAC 1-6-2 (Records; Notice of Malfunction):

- (a) A record of all malfunctions, including startups or shutdowns of any facility or emission control equipment, which result in violations of applicable air pollution control regulations or applicable emission limitations shall be kept and retained for a period of three (3) years and shall be made available to the Indiana Department of Environmental Management (IDEM), Office of Air Quality(OAQ) or appointed representative upon request.
- (b) When a malfunction of any facility or emission control equipment occurs which lasts more than one (1) hour, said condition shall be reported to OAQ, using the Malfunction Report Forms (2 pages). Notification shall be made by telephone or facsimile, as soon as practicable, but in no event later than four (4) daytime business hours after the beginning of said occurrence.
- (c) Failure to report a malfunction of any emission control equipment shall constitute a violation of 326 IAC 1-6, and any other applicable rules. Information of the scope and expected duration of the malfunction shall be provided, including the items specified in 326 IAC 1-6-2(a)(1) through (6).
- (d) Malfunction is defined as any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. [326 IAC 1-2-39]

C.12 Monitoring Data Availability [326 IAC 2-6.1-2] [IC 13-14-1-13]

- (a) With the exception of performance tests conducted in accordance with Section C-Performance Testing, all observations, sampling, maintenance procedures, and record keeping, required as a condition of this permit shall be performed at all times the equipment is operating at normal representative conditions.
- (b) As an alternative to the observations, sampling, maintenance procedures, and record keeping of subsection (a) above, when the equipment listed in Section D of this permit is not operating, the Permittee shall either record the fact that the equipment is shut down or perform the observations, sampling, maintenance procedures, and record keeping that would otherwise be required by this permit.
- (c) If the equipment is operating but abnormal conditions prevail, additional observations and sampling should be taken with a record made of the nature of the abnormality.
- (d) If for reasons beyond its control, the operator fails to make required observations, sampling, maintenance procedures, or record keeping, reasons for this must be recorded.
- (e) At its discretion, IDEM may excuse such failure providing adequate justification is documented and such failures do not exceed five percent (5%) of the operating time in any quarter.
- (f) Temporary, unscheduled unavailability of staff qualified to perform the required observations, sampling, maintenance procedures, or record keeping shall be considered a valid reason for failure to perform the requirements stated in (a) above.

C.13 General Record Keeping Requirements [326 IAC 2-6.1-2]

- (a) Records of all required monitoring data and support information shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be kept at the source location for a minimum of three (3) years and available upon the request of an IDEM, OAQ, representative. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a written request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.
- (b) Records of required monitoring information shall include, where applicable:
 - (1) The date, place, and time of sampling or measurements;
 - (2) The dates analyses were performed;
 - (3) The company or entity performing the analyses;
 - (4) The analytic techniques or methods used;
 - (5) The results of such analyses; and
 - (6) The operating conditions existing at the time of sampling or measurement.
- (c) Support information shall include, where applicable:
 - (1) Copies of all reports required by this permit;
 - (2) All original strip chart recordings for continuous monitoring instrumentation;
 - (3) All calibration and maintenance records;
 - (4) Records of preventive maintenance shall be sufficient to demonstrate that failure to implement the Preventive Maintenance Plan did not cause or contribute to a violation of any limitation on emissions or potential to emit. To be relied upon subsequent to any such violation, these records may include, but are not limited to: work orders, parts inventories, and operator's standard operating procedures. Records of response steps taken shall indicate whether the response steps were performed in accordance with the Compliance Response Plan required by Section C - Compliance Monitoring Plan - Failure to take Response Steps, of this permit, and whether a deviation from a permit condition was reported. All records shall briefly describe what maintenance and response steps were taken and indicate who performed the tasks.
- (d) All record keeping requirements not already legally required shall be implemented when operation begins.

C.14 General Reporting Requirements [326 IAC 2-1.1-11] [326 IAC 2-6.1-2] [IC 13-14-1-13]

- (a) Reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

- (b) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.
- (c) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period.

C.15 Annual Notification [326 IAC 2-6.1-5(a)(5)]

- (a) Annual notification shall be submitted to the Office of Air Quality stating whether or not the source is in operation and in compliance with the terms and conditions contained in this permit.
- (b) Noncompliance with any condition must be specifically identified. If there are any permit conditions or requirements for which the source is not in compliance at any time during the year, the Permittee must provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be, achieved. The notification must be signed by an authorized individual.
- (c) The annual notice shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted in the format attached no later than March 1 of each year to:

Compliance Data Section, Office of Air Quality
Indiana Department of Environmental Management
100 North Senate Avenue, P.O. Box 6015
Indianapolis, IN 46206-6015
- (d) The notification shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.

SECTION D.1

EMISSIONS UNIT OPERATION CONDITIONS

Facility Description:

- (a) Two paint Booths, identified as SB4 and SB5, each equipped with an airless spray gun, for metal parts, with a maximum capacity at each spray gun of 0.125 units per hour, using dry filters for overspray control and exhausting to stacks E105 and E106, respectively.
- (m) Three paint Booths, identified as SB1, SB 2 and SB3, installed in 1989, each equipped with an airless spray gun, for metal parts, with a maximum capacity at each spray gun of .25 unit per hour, using dry filters for overspray control and exhausting to stacks E85, E86 and E87, respectively.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards

D.1.1 VOC Limit

Paint booths SB4 and SB5 shall each use less than fifteen (15) pounds per day of VOC, including coatings, dilution solvents, and cleaning solvents. This usage limit is required to limit the potential to emit of VOC to less than 15 pounds per day. Compliance with this limit makes 326 IAC 8-2-9 (Miscellaneous Metal Coating Operations) not applicable.

D.1.2 Particulate Matter (PM) [326 IAC 6-3-2(c)]

The PM from the five (5) paint booths (SB1, SB2, SB3, SB4, and SB5) shall not exceed the pound per hour emission rate established as E in the following formula:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67}$$

where E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour

D.1.3 Preventive Maintenance Plan [326 IAC 1-6-3]

A Preventive Maintenance Plan, in accordance with Section C - Preventive Maintenance Plan, of this permit, is required for this emissions unit and any control devices.

Compliance Determination Requirements

D.1.4 Volatile Organic Compounds (VOC)

Compliance with the VOC content and usage limitations contained in Conditions D.1.1 shall be determined pursuant to 326 IAC 8-1-4(a)(3) and 326 IAC 8-1-2(a) using formulation data supplied by the coating manufacturer. IDEM, OAQ, reserves the authority to determine compliance using Method 24 in conjunction with the analytical procedures specified in 326 IAC 8-1-4.

D.1.5 Particulate Matter (PM)

The dry filters for PM control shall be in operation at all times when the five(5) paint booths (SB1, SB2, SB3, SB4 and SB5) are in operation.

Record Keeping and Reporting Requirements [326 IAC 2-5.1-3(e)(2)] [326 IAC 2-6.1-5(a)(2)]

D.1.6 Record Keeping Requirements

- (a) To document compliance with Conditions D.1.1, the Permittee shall maintain records in accordance with (1) through (6) below. Records maintained for (1) through (6) shall be taken daily and shall be complete and sufficient to establish compliance with the VOC usage limits and/or the VOC emission limits established in Condition D.1.1.
 - (1) The amount and VOC content of each coating material and solvent used. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used. Solvent usage records shall differentiate between those added to coatings and those used as cleanup solvents;
 - (2) A log of the dates of use;
 - (3) The cleanup solvent usage for each day;
 - (4) The total VOC usage for each day; and
 - (5) The weight of VOCs emitted for each compliance period.
- (b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.1.7 Reporting Requirements

Three monthly summaries of the information to document compliance with Condition D.1.1 shall be submitted quarterly to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported.

SECTION D.2

EMISSIONS UNIT OPERATION CONDITIONS

Facility Description:

- (b) One natural gas rooftop heater, identified as unit 92, with a maximum capacity of 0.045 MMBTU/hr and exhausting to stack 92.
- (c) One natural gas rooftop heater, identified as unit 76, with a maximum capacity of 0.115 MMBTU/hr and exhausting to stack 76.
- (d) One natural gas rooftop heater, identified as unit 65, with a maximum capacity of 0.18 MMBTU/hr and exhausting to stack 65.
- (e) Two natural gas rooftop heaters, identified as units 93 and 109, each with a maximum capacity of 0.2 MMBTU/hr and exhausting to stacks 93 and 109, respectively.
- (f) Three natural gas rooftop heaters, identified as units 90, 91 and 107, each with a maximum capacity of 0.25 MMBTU/hr and exhausting to stacks 90, 91 and 107, respectively.
- (g) Three natural gas rooftop heaters, identified as units 82, 83 and 84, each with a maximum capacity of 0.275 MMBTU/hr and exhausting to stacks 82, 83 and 84, respectively.
- (h) Three natural gas rooftop heaters, identified as units 12, 13 and 14, each with a maximum capacity of 0.36 MMBTU/hr and exhausting to stacks 12, 13 and 14, respectively.
- (i) Ten natural gas rooftop heaters, identified as units 96, 97, 98, 99, 100, 101, 102, 103, 104 and 108, each with a maximum capacity of 0.373 MMBTU/hr and exhausting to stacks 96, 97, 98, 99, 100, 101, 102, 103, 104 and 108, respectively.
- (j) Two natural gas rooftop heaters, identified as units 94 and 95, each with a maximum capacity of 0.43 MMBTU/hr and exhausting to stacks 94 and 95, respectively.
- (k) One natural gas rooftop heater, identified as unit 75, with a maximum capacity of 0.485 MMBTU/hr and exhausting to stack 75.
- (l) One natural gas rooftop heater, identified as unit 66, with a maximum capacity of 0.59 MMBTU/hr and exhausting to stack 66.
- (n) Two natural gas rooftop heaters, identified as units 60 and E23, each installed in 1989, each with a maximum capacity of 0.05 MMBTU/hr and exhausting to stacks 60 and E23, respectively.
- (o) Two natural gas rooftop heaters, identified as units 37 and 39, each installed in 1978, each with a maximum capacity of 0.0625 MMBTU/hr and exhausting to stacks 37 and 39, respectively.
- (p) One natural gas rooftop heater, identified as unit 30, installed in 1983, with a maximum capacity of 0.063 MMBTU/hr and exhausting to stack 30.
- (q) Five natural gas rooftop heaters, identified as units 1, 25, 33, 38 and 48/49, installed in 1974, 1984, 1985, 1978, and 1987, respectively, each with a maximum capacity of 0.08 MMBTU/hr and exhausting to stacks 1, 25, 33, 38 and 48/49, respectively.

Facility Description:

- (r) Two natural gas rooftop heaters, identified as units 22 and 26, installed in 1989 and 1990, respectively, each with a maximum capacity of 0.086 MMBTU/hr and exhausting to stacks 22 and 26, respectively.
- (s) Four natural gas rooftop heaters, identified as units E22, E51, E54 and E55, installed in 1990, 1989, 1983, and 1983, respectively, each with a maximum capacity of 0.1 MMBTU/hr and exhausting to stacks E22, E51, E54 and E55, respectively.
- (t) One natural gas rooftop heater, identified as unit 7, installed in 1980, with a maximum capacity of 0.11 MMBTU/hr and exhausting to stack 7.
- (u) Six natural gas rooftop heaters, identified as units 11, 19, 20, 44, 69 and 73/74, installed in 1980, 1983, 1983, 1987, 1987, and 1993, respectively, each with a maximum capacity of 0.115 MMBTU/hr and exhausting to stacks 11, 19, 20, 44, 69 and 73/74, respectively.
- (v) Six natural gas rooftop heaters, identified as units 15, 16, 46, 61, 62 and 41/42/43, installed in 1983, 1983, 1987, 1989, 1989, and 1987, respectively, each with a maximum capacity of 0.1155 MMBTU/hr and exhausting to stacks 15, 16, 46, 61, 62 and 41/42/43, respectively.
- (w) Three natural gas rooftop heaters, identified as units 70, 71 and 67/68, installed in 1991, 1993, and 1987, respectively, each with a maximum capacity of 0.12 MMBTU/hr and exhausting to stacks 70, 71 and 67/68, respectively.
- (x) Four natural gas rooftop heaters, identified as units 21, 24, 40 and 47, installed in 1989, 1984, 1987, and 1987, respectively, each with a maximum capacity of 0.125 MMBTU/hr and exhausting to stacks 21, 24, 40 and 47, respectively.
- (y) One natural gas rooftop heater, identified as unit E24, installed in 1989, with a maximum capacity of 0.13 MMBTU/hr and exhausting to stack E24.
- (z) One natural gas rooftop heater, identified as unit 51/52/53/57/58/59, installed in 1989, with a maximum capacity of 0.1331 MMBTU/hr and exhausting to stack 51/52/53/57/58/59.
- (aa) Two natural gas rooftop heaters, identified as units 8 and 10, installed in 1980, each with a maximum capacity of 0.15 MMBTU/hr and exhausting to stacks 8 and 10, respectively.
- (bb) One natural gas rooftop heater, identified as unit 63/64, installed in 1989, with a maximum capacity of 0.158 MMBTU/hr and exhausting to stack 63/64.
- (cc) Two natural gas rooftop heaters, identified as units E18 and E65, installed in 1981 and 1985, respectively, each with a maximum capacity of 0.165 MMBTU/hr and exhausting to stacks E18 and E65, respectively.
- (dd) One natural gas rooftop heater, identified as unit E19, installed in 1981, with a maximum capacity of 0.175 MMBTU/hr and exhausting to stack E19.
- (ee) One natural gas rooftop heater, identified as unit 27, installed in 1990, with a maximum capacity of 0.18 MMBTU/hr and exhausting to stack 27.
- (ff) One natural gas rooftop heater, identified as unit E67, installed in 1985, with a maximum capacity of 0.195 MMBTU/hr and exhausting to stack E67.

Facility Description:

- (gg) One natural gas rooftop heater, identified as unit E66, installed in 1985, with a maximum capacity of 0.2 MMBTU/hr and exhausting to stack E66.
- (hh) Five natural gas rooftop heaters, identified as units 2, 4, 6, 9 and 17/18, installed in 1974, 1974, 1974, 1980 and 1983, respectively, each with a maximum capacity of 0.225 MMBTU/hr and exhausting to stacks 2, 4, 6, 9 and 17/18, respectively.
- (ii) Two natural gas rooftop heaters, identified as units 3 and 5, installed in 1974, each with a maximum capacity of 0.25 MMBTU/hr and exhausting to stacks 3 and 5, respectively.
- (jj) One natural gas rooftop heater, identified as unit 45, installed in 1987, with a maximum capacity of 0.2875 MMBTU/hr and exhausting to stack 45.
- (kk) One natural gas rooftop heater, identified as unit 72, installed in 1993, with a maximum capacity of 0.8 MMBTU/hr and exhausting to stack 72.
- (ll) One Zyglo dipping process, identified as emission units 85105 and 85106, installed in 1997 and 2000, respectively, with a total maximum capacity of 100 units per hour and venting internally.
- (mm) One Dip Seal process, identified as emission unit 72043, installed in 1993, with a maximum capacity of 100 units per hour and venting internally.
- (nn) One SIS Cleaning Process, identified as emission unit E75, installed in 1998 with a maximum solvent throughput of 0.045 tons per year and venting internally.
- (oo) One Acetic Acid Sterilizing process, identified as emission unit E121, installed in 1995, with a maximum solvent throughput of 0.44 tons per year and venting internally.
- (pp) One isopropyl acid wipe-down process, installed in 1980, with a maximum solvent throughput of 0.8 tons per year and venting internally.
- (qq) Three liquified petroleum gas fired fork lift trucks rated at 48, 49 and 90 HP.
- (rr) One degreaser, identified as emission unit 86105/86106, installed in 1992, with a maximum solvent consumption of 3.0 gallons per day, using a wet scrubber for control and exhausting through stack E122.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards

There are no specifically applicable requirements.

SECTION D.3

EMISSIONS UNIT OPERATION CONDITIONS

Facility Description:

- (ss) Three degreasers, identified as emission units 85105, 85106 and 83122, installed in 1997, 2000 and 1994, respectively, each with a maximum solvent consumption of 0.5 gallons per day, and exhausting through stacks E55, E120 and E60, respectively.
- (tt) One small covered degreaser, with a maximum solvent capacity of 1 gallon and venting internally.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

D.3.1 Volatile Organic Compounds (VOC)

Pursuant to 326 IAC 8-3-2 (Cold Cleaner Operations), the owner or operator shall:

- (a) Equip the cleaner with a cover;
- (b) Equip the cleaner with a emissions unit for draining cleaned parts;
- (c) Close the degreaser cover whenever parts are not being handled in the cleaner;
- (d) Drain cleaned parts for at least fifteen (15) seconds or until dripping ceases;
- (e) Provide a permanent, conspicuous label summarizing the operation requirements;
- (f) Store waste solvent only in covered containers and not dispose of waste solvent or transfer it to another party, in such a manner that greater than twenty percent (20%) of the waste solvent (by weight) can evaporate into the atmosphere.

D.3.2 Volatile Organic Compounds (VOC)

- (a) Pursuant to 326 IAC 8-3-5(a) (Cold Cleaner Degreaser Operation and Control), the owner or operator of a cold cleaner degreaser emissions unit shall ensure that the following control equipment requirements are met:
 - (1) Equip the degreaser with a cover. The cover must be designed so that it can be easily operated with one (1) hand if:
 - (A) The solvent volatility is greater than two (2) kiloPascals (fifteen (15) millimeters of mercury or three-tenths (0.3) pounds per square inch) measured at thirty-eight degrees Celsius (38°C) (one hundred degrees Fahrenheit (100°F));
 - (B) The solvent is agitated; or
 - (C) The solvent is heated.
 - (2) Equip the degreaser with a emissions unit for draining cleaned articles. If the solvent volatility is greater than four and three-tenths (4.3) kiloPascals (thirty-two (32) millimeters of mercury) or six-tenths (0.6) pounds per square inch) measured at thirty-eight degrees Celsius (38°C) (one hundred degrees Fahrenheit (100°F)), then the drainage emissions unit must be internal such that articles are enclosed under the cover while draining. The drainage emissions

unit may be external for applications where an internal type cannot fit into the cleaning system.

- (3) Provide a permanent, conspicuous label which lists the operating requirements outlined in subsection (b).
 - (4) The solvent spray, if used, must be a solid, fluid stream and shall be applied at a pressure which does not cause excessive splashing.
 - (5) Equip the degreaser with one (1) of the following control devices if the solvent volatility is greater than four and three-tenths (4.3) kiloPascals (thirty-two (32) millimeters of mercury) or six-tenths (0.6) pounds per square inch) measured at thirty-eight degrees Celsius (38°C) (one hundred degrees Fahrenheit (100°F)), or if the solvent is heated to a temperature greater than forty-eight and nine-tenths degrees Celsius (48.9°C) (one hundred twenty degrees Fahrenheit (120°F)):
 - (A) A freeboard that attains a freeboard ratio of seventy-five hundredths (0.75) or greater.
 - (B) A water cover when solvent is used is insoluble in, and heavier than, water.
 - (C) Other systems of demonstrated equivalent control such as a refrigerated chiller of carbon adsorption. Such systems shall be submitted to the U.S. EPA as a SIP revision.
- (b) Pursuant to 326 IAC 8-3-5(b) (Cold Cleaner Degreaser Operation and Control), the owner or operator of a cold cleaning emissions unit shall ensure that the following operating requirements are met:
- (1) Close the cover whenever articles are not being handled in the degreaser.
 - (2) Drain cleaned articles for at least fifteen (15) seconds or until dripping ceases.
 - (3) Store waste solvent only in covered containers and prohibit the disposal or transfer of waste solvent in any manner in which greater than twenty percent (20%) of the waste solvent by weight could evaporate.

SECTION D.4

EMISSIONS UNIT OPERATION CONDITIONS

Facility Description:

- (uu) One polishing operation, consisting of 40 polishing jacks, installed between 1981 and 1998, each with a maximum throughput of 10 pieces per hour, using wet dust collectors 00222 and 00266 for PM control, and exhausting through stacks WDC1 and WDC2.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards

D.4.1 Particulate Matter (PM) [326 IAC 6-3]

Pursuant to 326 IAC 6-3 (Process Operations), the total allowable PM emission rate from the polishing operations shall not exceed 1.30 pounds per hour when operating at a total process weight rate of 360 pounds per hour.

The pounds per hour limitation was calculated with the following equation:

Interpolation of the data for the process weight rate up to 60,000 pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67}$$

where E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour

Compliance Determination Requirements [326 IAC 2-5.1-3(e)(2)] [326 IAC 2-6.1-5(a)(2)]

D.4.2 Particulate Matter (PM)

The wet dust collectors for PM control shall be in operation at all times when the polishing operations are in operation.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION**

MSOP Monthly Report

Source Name: DePuy Orthopaedics, Inc.
Source Address: 700 Orthopaedic Drive, Warsaw, Indiana 45681
Mailing Address: P.O. Box 988
Permit No.: 085-13979-00048
Facility: SB4, SB5
Parameter: VOC
Limit: 15 lbs/day

For each quarterly reporting period, submit three monthly reports.

Month: _____ **Year:** _____

Day	SB4	SB5	Day	SB4	SB5
1			17		
2			18		
3			19		
4			20		
5			21		
6			22		
7			23		
8			24		
9			25		
10			26		
11			27		
12			28		
13			29		
14			30		
15			31		
16			TOTAL		

9 No deviation occurred in this month.

9 Deviation/s occurred in this month.
Deviation has been reported on: _____

Submitted by: _____

Title/Position: _____

Signature: _____

Date: _____

Attach a signed certification to complete this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION**

**MINOR SOURCE OPERATING PERMIT
ANNUAL NOTIFICATION**

This form should be used to comply with the notification requirements under 326 IAC 2-6.1-5(a)(5).

Company Name:	DePuy Orthopaedics, Inc.
Address:	700 Orthopaedic Drive
City:	Warsaw, Indiana 45681
Phone #:	(219) 267-8143
MSOP #:	085-13979-00048

I hereby certify that DePuy Orthopaedic, Inc. is ☒ still in operation.
☐ no longer in operation.

I hereby certify that DePuy Orthopaedic, Inc. is ☒ in compliance with the requirements of MSOP 085-13979-00048.
☐ not in compliance with the requirements of MSOP 085-13979-00048.

Authorized Individual (typed):
Title:
Signature:
Date:

If there are any conditions or requirements for which the source is not in compliance, provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be achieved.

Noncompliance:

MALFUNCTION REPORT

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT OFFICE OF AIR QUALITY FAX NUMBER - 317 233-5967

**This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6
and to qualify for the exemption under 326 IAC 1-6-4.**

THIS FACILITY MEETS THE APPLICABILITY REQUIREMENTS BECAUSE IT HAS POTENTIAL TO EMIT 25 TONS/YEAR PARTICULATE MATTER ?_____, 25 TONS/YEAR SULFUR DIOXIDE ?_____, 25 TONS/YEAR NITROGEN OXIDES?_____, 25 TONS/YEAR VOC ?_____, 25 TONS/YEAR HYDROGEN SULFIDE ?_____, 25 TONS/YEAR TOTAL REDUCED SULFUR ?_____, 25 TONS/YEAR REDUCED SULFUR COMPOUNDS ?_____, 25 TONS/YEAR FLUORIDES ?_____, 100TONS/YEAR CARBON MONOXIDE ?_____, 10 TONS/YEAR ANY SINGLE HAZARDOUS AIR POLLUTANT ?_____, 25 TONS/YEAR ANY COMBINATION HAZARDOUS AIR POLLUTANT ?_____, 1 TON/YEAR LEAD OR LEAD COMPOUNDS MEASURED AS ELEMENTAL LEAD ?_____, OR IS A SOURCE LISTED UNDER 326 IAC 2-5.1-3(2) ?_____. EMISSIONS FROM MALFUNCTIONING CONTROL EQUIPMENT OR PROCESS EQUIPMENT CAUSED EMISSIONS IN EXCESS OF APPLICABLE LIMITATION _____.

THIS MALFUNCTION RESULTED IN A VIOLATION OF: 326 IAC _____ OR, PERMIT CONDITION # _____ AND/OR PERMIT LIMIT OF _____

THIS INCIDENT MEETS THE DEFINITION OF 'MALFUNCTION' AS LISTED ON REVERSE SIDE ? Y N

THIS MALFUNCTION IS OR WILL BE LONGER THAN THE ONE (1) HOUR REPORTING REQUIREMENT ? Y N

COMPANY: _____ PHONE NO. () _____
LOCATION: (CITY AND COUNTY) _____
PERMIT NO. _____ AFS PLANT ID: _____ AFS POINT ID: _____ INSP: _____
CONTROL/PROCESS DEVICE WHICH MALFUNCTIONED AND REASON: _____

DATE/TIME MALFUNCTION STARTED: ____/____/20____ AM / PM

ESTIMATED HOURS OF OPERATION WITH MALFUNCTION CONDITION:

DATE/TIME CONTROL EQUIPMENT BACK-IN SERVICE ____/____/20____ AM/PM

TYPE OF POLLUTANTS EMITTED: TSP, PM-10, SO2, VOC, OTHER: _____

ESTIMATED AMOUNT OF POLLUTANT EMITTED DURING MALFUNCTION: _____

MEASURES TAKEN TO MINIMIZE EMISSIONS: _____

REASONS WHY FACILITY CANNOT BE SHUTDOWN DURING REPAIRS:

CONTINUED OPERATION REQUIRED TO PROVIDE ESSENTIAL* SERVICES: _____

CONTINUED OPERATION NECESSARY TO PREVENT INJURY TO PERSONS: _____

CONTINUED OPERATION NECESSARY TO PREVENT SEVERE DAMAGE TO EQUIPMENT: _____

INTERIM CONTROL MEASURES: (IF APPLICABLE) _____

MALFUNCTION REPORTED BY: _____ TITLE: _____
(SIGNATURE IF FAXED)

MALFUNCTION RECORDED BY: _____ DATE: _____ TIME: _____

*SEE PAGE 2

**Please note - This form should only be used to report malfunctions
applicable to Rule 326 IAC 1-6 and to qualify for
the exemption under 326 IAC 1-6-4.**

326 IAC 1-6-1 Applicability of rule

Sec. 1. This rule applies to the owner or operator of any facility required to obtain a permit under 326 IAC 2-5.1 or 326 IAC 2-6.1.

326 IAC 1-2-39 "Malfunction" definition

Sec. 39. Any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner.

***Essential services** are interpreted to mean those operations, such as, the providing of electricity by power plants. Continued operation solely for the economic benefit of the owner or operator shall not be sufficient reason why a facility cannot be shutdown during a control equipment shutdown.

If this item is checked on the front, please explain rationale:

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for a New Source Construction and Minor Source Operating Permit

Source Background and Description

Source Name: DePuy Orthopaedics, Inc.
Source Location: 700 Orthopaedics Drive, Warsaw, Indiana 45681
County: Kosciusko
SIC Code: 3842
Operation Permit No.: 085-13979-00048
Permit Reviewer: ERG/KH

The Office of Air Quality (OAQ) has reviewed an application from DePuy Orthopaedics, Inc. relating to the construction and operation of an orthopaedic appliances manufacturing source.

New Emission Units and Pollution Control Equipment

- (a) Two paint Booths, identified as SB4 and SB5, each equipped with an airless spray gun, for metal parts, with a maximum capacity at each spray gun of 0.125 units per hour, using dry filters for overspray control and exhausting to stacks E105 and E106, respectively.
- (b) One natural gas rooftop heater, identified as unit 92, with a maximum capacity of 0.045 MMBTU/hr and exhausting to stack 92.
- (c) One natural gas rooftop heater, identified as unit 76, with a maximum capacity of 0.115 MMBTU/hr and exhausting to stack 76.
- (d) One natural gas rooftop heater, identified as unit 65, with a maximum capacity of 0.18 MMBTU/hr and exhausting to stack 65.
- (e) Two natural gas rooftop heaters, identified as units 93 and 109, each with a maximum capacity of 0.2 MMBTU/hr and exhausting to stacks 93 and 109, respectively.
- (f) Three natural gas rooftop heaters, identified as units 90, 91 and 107, each with a maximum capacity of 0.25 MMBTU/hr and exhausting to stacks 90, 91 and 107, respectively.
- (g) Three natural gas rooftop heaters, identified as units 82, 83 and 84, each with a maximum capacity of 0.275 MMBTU/hr and exhausting to stacks 82, 83 and 84, respectively.
- (h) Three natural gas rooftop heaters, identified as units 12, 13 and 14, each with a maximum capacity of 0.36 MMBTU/hr and exhausting to stacks 12, 13 and 14, respectively.

- (i) Ten natural gas rooftop heaters, identified as units 96, 97, 98, 99, 100, 101, 102, 103, 104 and 108, each with a maximum capacity of 0.373 MMBTU/hr and exhausting to stacks 96, 97, 98, 99, 100, 101, 102, 103, 104 and 108, respectively.
- (j) Two natural gas rooftop heaters, identified as units 94 and 95, each with a maximum capacity of 0.43 MMBTU/hr and exhausting to stacks 94 and 95, respectively.
- (k) One natural gas rooftop heater, identified as unit 75, with a maximum capacity of 0.485 MMBTU/hr and exhausting to stack 75.
- (l) One natural gas rooftop heater, identified as unit 66, with a maximum capacity of 0.59 MMBTU/hr and exhausting to stack 66.

Permitted Emission Units and Pollution Control Equipment

The source consists of the following permitted emission units and pollution control devices:

- (m) Three paint Booths, identified as SB1, SB 2 and SB3, installed in 1989, each equipped with an airless spray gun, for metal parts, with a maximum capacity at each spray gun of .25 unit per hour, using dry filters for overspray control and exhausting to stacks E85, E86 and E87, respectively.
- (n) Two natural gas rooftop heaters, identified as units 60 and E23, each installed in 1989, each with a maximum capacity of 0.05 MMBTU/hr and exhausting to stacks 60 and E23, respectively.
- (o) Two natural gas rooftop heaters, identified as units 37 and 39, each installed in 1978, each with a maximum capacity of 0.0625 MMBTU/hr and exhausting to stacks 37 and 39, respectively.
- (p) One natural gas rooftop heater, identified as unit 30, installed in 1983, with a maximum capacity of 0.063 MMBTU/hr and exhausting to stack 30.
- (q) Five natural gas rooftop heaters, identified as units 1, 25, 33, 38 and 48/49, installed in 1974, 1984, 1985, 1978, and 1987, respectively, each with a maximum capacity of 0.08 MMBTU/hr and exhausting to stacks 1, 25, 33, 38 and 48/49, respectively.
- (r) Two natural gas rooftop heaters, identified as units 22 and 26, installed in 1989 and 1990, respectively, each with a maximum capacity of 0.086 MMBTU/hr and exhausting to stacks 22 and 26, respectively.
- (s) Four natural gas rooftop heaters, identified as units E22, E51, E54 and E55, installed in 1990, 1989, 1983, and 1983, respectively, each with a maximum capacity of 0.1 MMBTU/hr and exhausting to stacks E22, E51, E54 and E55, respectively.
- (t) One natural gas rooftop heater, identified as unit 7, installed in 1980, with a maximum capacity of 0.11 MMBTU/hr and exhausting to stack 7.
- (u) Six natural gas rooftop heaters, identified as units 11, 19, 20, 44, 69 and 73/74, installed in 1980, 1983, 1983, 1987, 1987, and 1993, respectively, each with a maximum capacity of 0.115 MMBTU/hr and exhausting to stacks 11, 19, 20, 44, 69 and 73/74, respectively.
- (v) Six natural gas rooftop heaters, identified as units 15, 16, 46, 61, 62 and 41/42/43, installed in 1983, 1983, 1987, 1989, 1989, and 1987, respectively, each with a maximum capacity of 0.1155 MMBTU/hr and exhausting to stacks 15, 16, 46, 61, 62 and 41/42/43, respectively.

- (w) Three natural gas rooftop heaters, identified as units 70, 71 and 67/68, installed in 1991, 1993, and 1987, respectively, each with a maximum capacity of 0.12 MMBTU/hr and exhausting to stacks 70, 71 and 67/68, respectively.
- (x) Four natural gas rooftop heaters, identified as units 21, 24, 40 and 47, installed in 1989, 1984, 1987, and 1987, respectively, each with a maximum capacity of 0.125 MMBTU/hr and exhausting to stacks 21, 24, 40 and 47, respectively.
- (y) One natural gas rooftop heater, identified as unit E24, installed in 1989, with a maximum capacity of 0.13 MMBTU/hr and exhausting to stack E24.
- (z) One natural gas rooftop heater, identified as unit 51/52/53/57/58/59, installed in 1989, with a maximum capacity of 0.1331 MMBTU/hr and exhausting to stack 51/52/53/57/58/59.
- (aa) Two natural gas rooftop heaters, identified as units 8 and 10, installed in 1980, each with a maximum capacity of 0.15 MMBTU/hr and exhausting to stacks 8 and 10, respectively.
- (bb) One natural gas rooftop heater, identified as unit 63/64, installed in 1989, with a maximum capacity of 0.158 MMBTU/hr and exhausting to stack 63/64.
- (cc) Two natural gas rooftop heaters, identified as units E18 and E65, installed in 1981 and 1985, respectively, each with a maximum capacity of 0.165 MMBTU/hr and exhausting to stacks E18 and E65, respectively.
- (dd) One natural gas rooftop heater, identified as unit E19, installed in 1981, with a maximum capacity of 0.175 MMBTU/hr and exhausting to stack E19.
- (ee) One natural gas rooftop heater, identified as unit 27, installed in 1990, with a maximum capacity of 0.18 MMBTU/hr and exhausting to stack 27.
- (ff) One natural gas rooftop heater, identified as unit E67, installed in 1985, with a maximum capacity of 0.195 MMBTU/hr and exhausting to stack E67.
- (gg) One natural gas rooftop heater, identified as unit E66, installed in 1985, with a maximum capacity of 0.2 MMBTU/hr and exhausting to stack E66.
- (hh) Five natural gas rooftop heaters, identified as units 2, 4, 6, 9 and 17/18, installed in 1974, 1974, 1974, 1980 and 1983, respectively, each with a maximum capacity of 0.225 MMBTU/hr and exhausting to stacks 2, 4, 6, 9 and 17/18, respectively.
- (ii) Two natural gas rooftop heaters, identified as units 3 and 5, installed in 1974, each with a maximum capacity of 0.25 MMBTU/hr and exhausting to stacks 3 and 5, respectively.
- (jj) One natural gas rooftop heater, identified as unit 45, installed in 1987, with a maximum capacity of 0.2875 MMBTU/hr and exhausting to stack 45.
- (kk) One natural gas rooftop heater, identified as unit 72, installed in 1993, with a maximum capacity of 0.8 MMBTU/hr and exhausting to stack 72.
- (ll) One Zyglo dipping process, identified as emission units 85105 and 85106, installed in 1997 and 2000, respectively, with a total maximum capacity of 100 units per hour and venting internally.
- (mm) One Dip Seal process, identified as emission unit 72043, installed in 1993, with a maximum capacity of 100 units per hour and venting internally.

- (nn) One SIS Cleaning Process, identified as emission unit E75, installed in 1998 with a maximum solvent throughput of 0.045 tons per year and venting internally.
- (oo) One Acetic Acid Sterilizing process, identified as emission unit E121, installed in 1995, with a maximum solvent throughput of 0.44 tons per year and venting internally.
- (pp) One isopropyl acid wipe-down process, installed in 1980, with a maximum solvent throughput of 0.8 tons per year and venting internally.
- (qq) Three liquified petroleum gas fired fork lift trucks rated at 48, 49 and 90 HP.
- (rr) One degreaser, identified as emission unit 86105/86106, installed in 1992, with a maximum solvent consumption of 3.0 gallons per day, using a wet scrubber for control and exhausting through stack E122.
- (ss) Three degreasers, identified as emission units 85105, 85106 and 83122, installed in 1997, 2000 and 1994, respectively, each with a maximum solvent consumption of 0.5 gallons per day, and exhausting through stacks E55, E120 and E60, respectively.
- (tt) One small covered degreaser, with a maximum solvent capacity of 1 gallon and venting internally.

Unpermitted Emission Units and Pollution Control Equipment

The source also consists of the following unpermitted facilities/units:

- (uu) One polishing operation, consisting of 40 polishing jacks, installed between 1981 and 1998, each with a maximum throughput of 10 pieces per hour, using wet dust collectors 00222 and 00266 for PM control, and exhausting through stacks WDC1 and WDC2.

Existing Approvals

The source has been operating under previous approvals including, but not limited to, the following:

- (a) 085-4266-00048, issued on February 21, 1995.

Enforcement Issue

- (a) IDEM is aware that equipment has been constructed and operated prior to receipt of the proper permit. The subject equipment is listed in this Technical Support Document under the condition entitled *Unpermitted Emission Units and Pollution Control Equipment*.
- (b) IDEM is reviewing this matter and will take appropriate action. This proposed permit is intended to satisfy the requirements of the construction permit rules.

Recommendation

The staff recommends to the Commissioner that the construction and operation be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on February 27, 2001, with additional information received on March 29, 2001.

Emission Calculations

See Appendix A of this document for detailed emissions calculations (pages 1 through 8).

Potential To Emit of Source Before Controls

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, the department, or the appropriate local air pollution control agency.”

Pollutant	Potential To Emit (tons/year)
PM	21.31
PM-10	21.31
SO ₂	0.05
VOC	19.93
CO	57.28
NO _x	29.15

HAP's	Potential To Emit (tons/year)
Toluene	14.48
Methyl Methacrylate	0.07
Diethylene Glycol Butyl Ether	0.47
TOTAL	15.01

- (a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of any single HAP is greater than ten (10) tons per year and/or the potential to emit (as defined in 326 IAC 2-7-1(29)) of a combination of HAPs is greater than twenty-five (25) tons per year, therefore, the source is subject to the provisions of 326 IAC 2-7.
- (b) This source is not one of the twenty eight (28) listed source categories under 326 IAC 2-2.
- (c) Pursuant to 326 IAC 2-7-(a)(1)(A)(ii) and 326 IAC 2-5.1-4, the Permittee shall apply for a Title V operating permit within twelve (12) months of the date on which the source first meets an applicability criterion of 326 IAC 2-7-2.
- (d) Until the Permittee applies for a Title V operating permit as outlined in paragraph (b), the Permittee is subject to 326 IAC 2-6, and will be issued a New Source Construction and Minor Source Operating Permit.

County Attainment Status

The source is located in Kosciusko County.

Pollutant	Status
PM-10	Attainment
SO ₂	Attainment
NO ₂	Attainment
Ozone	Attainment
CO	Attainment
Lead	Attainment

- (a) Volatile organic compounds (VOC) and oxides of nitrogen (NO_x) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Kosciusko County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.
- (b) Kosciusko County has been classified as attainment or unclassifiable for all criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

Source Status

Existing Source PSD, Part 70 or FESOP Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity and/ or as otherwise limited):

Pollutant	Emissions (ton/yr)
PM	21.01
PM10	21.01
SO ₂	0.03
VOC	13.85
CO	53.98
NO _x	25.15

- (a) This existing source is **not** a major stationary source because no attainment regulated pollutant is emitted at a rate of 250 tons per year or more, and it is not in one of the 28 listed source categories.
- (b) These emissions were based on calculations included in Appendix A of this TSD.

Proposed Modification

PTE from the proposed modification (based on 8,760 hours of operation per year at rated capacity including enforceable emission control and production limit, where applicable):

Pollutant	PM (ton/yr)	PM10 (ton/yr)	SO ₂ (ton/yr)	VOC (ton/yr)	CO (ton/yr)	NO _x (ton/yr)
Proposed Modification	0.3	0.3	0.02	6.08	3.3	4.0
PSD or Offset Threshold Level	250	250	250	250	250	250

This modification to an existing minor stationary source is not major because the emission increase is less than the PSD significant levels. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements do not apply.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This existing source, with the addition of the new emission units described in this permit, is subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) at least one of the criteria pollutant is greater than or equal to 100 tons per year,
- (b) a single hazardous air pollutant (HAP) is greater than or equal to 10 tons per year, or
- (c) any combination of HAPs is greater than or equal to 25 tons/year.

This source shall apply for a Part 70 (Title V) operating permit within twelve (12) months after this source becomes subject to Title V.

Federal Rule Applicability

- (a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this source.
- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR Part 63) applicable to this source. The provisions of 40 CFR 63, Subpart T do not apply to any of the degreasers because they do not use any solvent containing methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride or chloroform or any combination of these halogenated HAP solvents, in a total concentration greater than 5 percent by weight, as a cleaning and/or drying agent.

State Rule Applicability - Entire Source

326 IAC 2-2 (Prevention of Significant Deterioration)

The potential to emit all criteria pollutants are less than two-hundred and fifty (250) tons per year. Therefore, the provisions of 326 IAC 2-2 do not apply.

326 IAC 2-6 (Emission Reporting)

This source is located in Kosciusko County and the potential to emit all criteria pollutants is less than one hundred (100) tons per year. Therefore, 326 IAC 2-6 does not apply.

326 IAC 5-1 (Visible Emissions Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

State Rule Applicability - Individual Facilities

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))

The existing sources of HAP, the three paint booths SB1, SB2, and SB3 and the three degreasers 85105, 85106 and 83122 were constructed before the applicability date of July 27, 1997 for the New Source Toxics Rule and therefore are not subject to the provisions of 326 IAC 2-4.1. The new sources of HAP, the paint booths SB4 and SB5 emit less than ten (10) tons per year of any single HAP and less than twenty-five (25) tons per year of a combination of HAPs. The addition of the new booths is also not considered a reconstruction of the existing source. Therefore, the provisions of 326 IAC 2-4.1 (Major Sources of HAP) do not apply.

326 IAC 6-3-2 (Process Operations)

Pursuant to 326 IAC 6-3-2, the total allowable PM emission rate from the polishing operation shall not exceed 1.30 lb/hr when operating at a total process weight rate of 360 lb/hr. The particulate matter (PM) from the paint booths SB1, SB2, SB3, SB4 and SB5 and the polishing operations shall be limited by the following:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

The dry filters shall be in operation at all times the paint booths are in operation, and the wet dust collectors shall be in operation at all times the polishing operations are in operation in order to comply with this limit.

326 IAC 8-2-9 (Miscellaneous Metal Coating)

The two paint booths SB4 and SB5 shall each use less than fifteen (15) pounds of VOC per day. Compliance with this limit makes 326 IAC 8-2-9 (Miscellaneous Metal Coating Operations) not applicable.

The three existing paint booths, SB1, SB2, and SB3, were constructed in 1989 and have a potential to emit less than twenty-five (25) tons of VOC per year. Therefore, the provisions of 8-2-9 (Miscellaneous Metal Coating Operations) are not applicable.

326 IAC 8-3-2 (Cold Cleaner Operations)

Pursuant to 326 IAC 8-3-2 (Cold Cleaner Operations), the owner or operator shall:

- (a) Equip the cleaner with a cover;
- (b) Equip the cleaner with a emissions unit for draining cleaned parts;
- (c) Close the degreaser cover whenever parts are not being handled in the cleaner;
- (d) Drain cleaned parts for at least fifteen (15) seconds or until dripping ceases;
- (e) Provide a permanent, conspicuous label summarizing the operation requirements;
- (f) Store waste solvent only in covered containers and not dispose of waste solvent or transfer it to another party, in such a manner that greater than twenty percent (20%) of the waste solvent (by weight) can evaporate into the atmosphere.

The degreaser identified as 86105/86106 uses a non-organic solvent and is therefore not subject to the provisions of 326 IAC 8-3-2.

326 IAC 8-3-5 (Cold Cleaner Degreaser Operation and Control)

The cold cleaner type degreasers without remote solvent reservoirs are subject to the requirements of 326 IAC 8-3-5(a). This rule requires that the owner or operator of a cold cleaner degreaser facility shall ensure that the degreaser is equipped with a cover that must be designed so that it can be easily operated with one (1) hand if certain conditions exist. The degreasers must be equipped with a facility for draining cleaned articles.

The degreaser identified as 86105/86106 uses a non-organic solvent and is therefore not subject to the provisions of 326 IAC 8-3-5.

Conclusion

The construction and operation of this orthopaedic appliance manufacturing source shall be subject to the conditions of the attached proposed New Source Construction and Minor Source Operating Permit 085-13979-00048.

Appendix A: Emissions Calculations**Natural Gas Combustion Only****MM BTU/HR <100****Small Industrial Boiler****Company Name:** Depuy Orthopaedics, Inc.**Address City IN Zip:** 700 Orthopaedic Dr., Warsaw, IN 45681**CP:** 085-13979**Plt ID:** 085-00048**Reviewer:** ERG/KH**Date:** 03/14/2001Heat Input Capacity
MMBtu/hrPotential Throughput
MMCF/yr

17.2

150.6

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	7.6	7.6	0.6	100.0	5.5	84.0
				**see below		
Potential Emission in tons/yr	0.6	0.6	0.05	7.5	0.4	6.3

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).

See page 2 for HAPs emissions calculations.

**Appendix A: Emissions Calculations
Natural Gas Combustion Only**

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MM BTU/HR <100

Small Industrial Boiler

HAPs Emissions

Company Name: Depuy Orthopaedics, Inc.

Address City IN Zip: 700 Orthopaedic Dr., Warsaw, IN 45681

CP: 085-13979

Plt ID: 085-00048

Reviewer: ERG/KH

Date: 03/14/2001

HAPs - Organics

Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	1.581E-04	9.035E-05	5.647E-03	1.355E-01	2.560E-04

HAPs - Metals

Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential Emission in tons/yr	3.765E-05	8.282E-05	1.054E-04	2.861E-05	1.581E-04

Methodology is the same as page 1.

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

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Appendix A: Emissions Calculations

Natural Gas Combustion Only

MM BTU/HR <100

Small Industrial Boiler

Company Name: Depuy Orthopaedics, Inc.

Address City IN Zip: 700 Orthopaedic Dr., Warsaw, IN 45681

CP: 085-13979

Plt ID: 085-00048

Reviewer: ERG/KH

Date: 03/14/2001

NG Combustion Emissions:

Existing						New		
Type of FCU	ID#	MMBTU/hr	Type of FCU	ID#	MMBTU/hr	Type of FCU	ID#	MMBTU/hr
Roof Top Heater	E22	0.1	Roof Top Heater	22	0.086	Roof Top Heater	12	0.36
Roof Top Heater	E23	0.05	Roof Top Heater	24	0.125	Roof Top Heater	107	0.25
Roof Top Heater	E24	0.13	Roof Top Heater	25	0.08	Roof Top Heater	104	0.373
Roof Top Heater	E51	0.1	Roof Top Heater	26	0.086	Roof Top Heater	103	0.373
Roof Top Heater	E54	0.1	Roof Top Heater	27	0.18	Roof Top Heater	102	0.373
Roof Top Heater	E55	0.1	Roof Top Heater	30	0.063	Roof Top Heater	101	0.373
Roof Top Heater	E65	0.165	Roof Top Heater	33	0.08	Roof Top Heater	100	0.373
Roof Top Heater	E66	0.2	Roof Top Heater	37	0.0625	Roof Top Heater	99	0.373
Roof Top Heater	E18	0.165	Roof Top Heater	38	0.08	Roof Top Heater	98	0.373
Roof Top Heater	E19	0.175	Roof Top Heater	39	0.0625	Roof Top Heater	97	0.373
Roof Top Heater	E67	0.195	Roof Top Heater	40	0.125	Roof Top Heater	96	0.373
				41, 42,				
Roof Top Heater	1	0.08	Roof Top Heater	43	0.1155	Roof Top Heater	95	0.43
Roof Top Heater	2	0.225	Roof Top Heater	44	0.115	Roof Top Heater	94	0.43
Roof Top Heater	3	0.25	Roof Top Heater	45	0.2875	Roof Top Heater	93	0.2
Roof Top Heater	4	0.225	Roof Top Heater	46	0.1155	Roof Top Heater	92	0.045
Roof Top Heater	5	0.25	Roof Top Heater	47	0.125	Roof Top Heater	91	0.25
Roof Top Heater	6	0.225	Roof Top Heater	48, 49	0.08	Roof Top Heater	90	0.25
				51,52,53,				
Roof Top Heater	7	0.11	Roof Top Heater	57,58,59	0.1331	Roof Top Heater	66	0.59
Roof Top Heater	8	0.15	Roof Top Heater	60	0.05	Roof Top Heater	65	0.18
Roof Top Heater	9	0.225	Roof Top Heater	61	0.1155	Roof Top Heater	84	0.275
Roof Top Heater	10	0.15	Roof Top Heater	62	0.1155	Roof Top Heater	83	0.275
Roof Top Heater	11	0.115	Roof Top Heater	63, 64	0.158	Roof Top Heater	82	0.275
Roof Top Heater	15	0.1155	Roof Top Heater	67, 68	0.12	Roof Top Heater	76	0.115
Roof Top Heater	16	0.1155	Roof Top Heater	69	0.115	Roof Top Heater	75	0.485
Roof Top Heater	17, 18	0.225	Roof Top Heater	70	0.12	Roof Top Heater	14	0.36
Roof Top Heater	19	0.115	Roof Top Heater	71	0.12	Roof Top Heater	13	0.36
Roof Top Heater	20	0.115	Roof Top Heater	72	0.8	Roof Top Heater	108	0.373
Roof Top Heater	21	0.125	Roof Top Heater	73, 74	0.115	Roof Top Heater	109	0.2
Existing Total						Total New		
MMBTU/hr =		8.13	MMBTU/hr =			9.06		

TOTAL MMBTU/HR = 17.19

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Unit	Material	Density (Lb/Gal)	Weight % Volatile (H2O & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency
SB1	Toluene	7.3	100.00%	0.0%	100.0%	0.0%	0.00%	0.65000	0.125	7.26	7.26	0.59	14.16	2.58	0.00	ERR	75%
	Paraloid	7.9	56.00%	0.0%	56.0%	0.0%	44.00%	0.15000	0.125	4.44	4.44	0.08	2.00	0.36	0.07	10.08	75%
SB2	Toluene	7.3	100.00%	0.0%	100.0%	0.0%	0.00%	0.65000	0.125	7.26	7.26	0.59	14.16	2.58	0.00	ERR	75%
	Paraloid	7.9	56.00%	0.0%	56.0%	0.0%	44.00%	0.15000	0.125	4.44	4.44	0.08	2.00	0.36	0.07	10.08	75%
SB3	Toluene	7.3	100.00%	0.0%	100.0%	0.0%	0.00%	0.65000	0.125	7.26	7.26	0.59	14.16	2.58	0.00	ERR	75%
	Paraloid	7.9	56.00%	0.0%	56.0%	0.0%	44.00%	0.15000	0.125	4.44	4.44	0.08	2.00	0.36	0.07	10.08	75%
SB4	Toluene	7.3	100.00%	0.0%	100.0%	0.0%	0.00%	0.65000	0.125	7.26	7.26	0.59	14.16	2.58	0.00	ERR	75%
	Paraloid	7.9	56.00%	0.0%	56.0%	0.0%	44.00%	0.15000	0.125	4.44	4.44	0.08	2.00	0.36	0.07	10.08	75%
SB5	Toluene	7.3	100.00%	0.0%	100.0%	0.0%	0.00%	0.65000	0.125	7.26	7.26	0.59	14.16	2.58	0.00	ERR	75%
	Paraloid	7.9	56.00%	0.0%	56.0%	0.0%	44.00%	0.15000	0.125	4.44	4.44	0.08	2.00	0.36	0.07	10.08	75%

METHODOLOGY

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Appendix A: Emission Calculations
HAP Emission Calculations

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Company Name: Depuy Orthopaedics, Inc.
Address City IN Zip: 700 Orthopaedic Dr., Warsaw, IN 45681
CP#: 085-13979
Plt ID: 085-00048
Permit Reviewer: ERG/KH
Date: 03/14/2001

Unit	Material	Density (lb/gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % Toluene	Weight % Methyl Methacrylate	Weight % Diethylene Glycol Butyl Ether	Toluene Emissions (ton/yr)	Methyl Methacrylate Emissions (ton/yr)	Diethylene Glycol Butyl Ether Emissions (ton/yr)
SB 1	Toluene	7.3	0.65000	0.125	100.00%	0.00%	0.00%	2.58	0.00	0.00
	Paraloid	7.9	0.15000	0.125	48.00%	2.00%	0.00%	0.31	0.01	0.00
SB2	Toluene	7.3	0.65000	0.125	100.00%	0.00%	0.00%	2.58	0.00	0.00
	Paraloid	7.9	0.15000	0.125	48.00%	2.00%	0.00%	0.31	0.01	0.00
SB3	Toluene	7.3	0.65000	0.125	100.00%	0.00%	0.00%	2.58	0.00	0.00
	Paraloid	7.9	0.15000	0.125	48.00%	2.00%	0.00%	0.31	0.01	0.00
SB4	Toluene	7.3	0.65000	0.125	100.00%	0.00%	0.00%	2.58	0.00	0.00
	Paraloid	7.9	0.15000	0.125	48.00%	2.00%	0.00%	0.31	0.01	0.00
SB5	Toluene	7.3	0.65000	0.125	100.00%	0.00%	0.00%	2.58	0.00	0.00
	Paraloid	7.9	0.15000	0.125	48.00%	2.00%	0.00%	0.31	0.01	0.00
Degreasers	Oakite	8.5	0.12500	1.000	0.00%	0.00%	10.00%	0.00	0.00	0.47

Total Potential Emissions **14.48** **0.07** **0.47**

Total HAP Potential to Emit (tpy) = 15.01

METHODOLOGY

HAPS emission rate (tons/yr) = Density (lb/gal) * Gal of Material (gal/unit) * Maximum (unit/hr) * Weight % HAP * 8760 hrs/yr * 1 ton/2000 lbs

Hapcalc.wk4 9/95

Appendix A: Emissions Calculations
Polishing Operations

Page 6 of 9 TSD App A

Company Name: Depuy Orthopaedics, Inc.
Address City IN Zip: 700 Orthopaedic Dr., Warsaw, IN 45681
CP: 085-13979
Plt ID: 085-00048
Reviewer: ERG/KH
Date: 03/14/2001

Polishing Operations

The polishing operations are controlled with two wet dust collectors (WDC 1, WDC 2)

Amount of PM collected:	37	pounds per day
Hours of Operation	8	hours per day

Amount of PM collected:	4.63	pounds/hour
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Potential to emit PM:	20.26	tons per year
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Appendix A: Emissions Calculations
VOC
Degreasing Operations

Company Name: Depuy Orthopaedics, Inc.
Address City IN Zip: 700 Orthopaedic Dr., Warsaw, IN 45681
CP: 085-13979
Plt ID: 085-00048
Reviewer: ERG/KH
Date: 03/14/2001

Unit	Material	Density (Lb/Gal)	Weight % Volatile (H2O & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency
85106	Oakite	8.5	10.00%	0.0%	10.0%	0.0%	0.00%	0.06250	1.000	0.85	0.85	0.05	1.28	0.23	0.00	ERR	100%
83122	Oakite	8.5	10.00%	0.0%	10.0%	0.0%	0.00%	0.06250	1.000	0.85	0.85	0.05	1.28	0.23	0.00	ERR	100%
85105/85106	Nitric Acid	11.6	0.00%	0.0%	0.0%	0.0%	0.00%	0.06250	1.000	0.00	0.00	0.00	0.00	0.00	0.00	ERR	100%

Total Potential Emissions0.112.550.470.00

METHODOLOGY

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs)
Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hrs/yr) *(1 ton/2000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids)
Total = Worst Coating + Sum of all solvents used

Appendix A: Emissions Calculations**VOC****Cleaning/Sterilizing Processes**

Company Name: Depuy Orthopaedics, Inc.
Address City IN Zip: 700 Orthopaedic Dr., Warsaw, IN 45681
CP: 085-13979
Plt ID: 085-00048
Reviewer: ERG/KH
Date: 03/14/2001

Unit	Material	Total Use (tpy)	Total VOC Emissions (tpy)
IPA Cleaning	Isopropyl Alcohol	0.8	0.8
Sterilize	Acetic Acid	0.44	0.44
SIS Cleaning	Ethanol	0.05	0.05
TOTAL		1.29	1.29